

KITCHEN GARBAGE GRINDERS
THE EFFECT ON SEWERAGE SYSTEMS
AND REFUSE HANDLING

by

Dr. P.H. Jones P.Eng.
Professor of Civil Engineering
Institute for Environmental Studies
UNIVERSITY OF TORONTO

November 1990

**KITCHEN GARBAGE GRINDERS (KGGs/FOOD WASTE DISPOSERS)
The effect on the sewerage system and refuse handling**

by

Dr. P.H. Jones, P.Eng.

INTRODUCTION

In many major cities of the world there exists a municipal garbage disposal problem (crisis?). One of the most serious components of this problem is the wet food wastes from the kitchen which gives rise to public health and nuisance problems.

Wet kitchen scraps are readily biodegradable. If stored in a warm kitchen (garbage container) they will readily decompose under anaerobic conditions giving rise to bad odours, providing a refuge for flies, cockroaches and bacteria. Most householders will try and get this wet refuse out of the house or apartment as rapidly as possible. But to do this they add it to the remaining dry refuse which is otherwise quite inoffensive and could be easily stored for weeks if necessary.

Those municipalities that have experienced "garbage strikes" are very familiar with the results of bags of rotting garbage being stored in parks, tennis courts and street corners. The rodent population grows and suddenly there is perceived to be a major public health threat.

Any plan for the handling and disposal of municipal wastes that can expect to be successful will REQUIRE the separation of these wet putrescible food scraps from the remaining dry generally poorly biodegradable and frequently recyclable refuse.

Most of the woes of the old-fashioned landfill method of garbage disposal results from this small fraction of wet putrescible wastes.

The groundwater contamination from leachate, which is up to 100 times stronger than domestic sewage, originates in this food waste fraction of the garbage. The bacterial decomposition of these food wastes results in a depression of the pH and produces a leachate, that is more acid, and able to readily dissolve heavy metals. The anaerobic digestion process in the landfill produces explosive and some toxic gases rendering large areas of land sterile for many urban or even natural uses. This small fraction of urban waste causes inordinate problems quite out of proportion to their size.

The separation of this putrescible fraction of the waste must therefore occur at source. The wet fraction should never be mixed with the dry, inoffensive, easily managed, largely recyclable portion, because once mixed it cannot easily be separated out again.